

channel DCH2 and the first data channel DCH1 is 2 frames.

As described above, according to this embodiment 9, when the in-buffer data amount $Dbuf$ has been not larger than the predetermined transmission stop threshold value $Sth-m$ throughout the predetermined transmission stop time $Tstp-m$, the transmission is sequentially stopped for the respective data channel DCH. Accordingly, the abrupt decrease of transmission power can be prevented. Thus, the mobile station 1 and the base station 2 can excellently perform the closed loop transmission power control similarly to the embodiment 6. Therefore, wasteful power consumption of the mobile station 1 and the mobile station 2 can be suppressed.

Further, as the in-buffer data amount $Dbuf$ becomes small, the number of used data channels is decreased. Accordingly, interference power to another user can be made smaller than the case where all data channels are continuously used until the in-buffer data amount $Dbuf$ becomes 0.

Embodiment 10

Fig. 20 is a flowchart for explaining transmission stop control processing according to embodiment 10 of the present invention. This embodiment 10 is for more specifically explaining the embodiment 9.

The control portion 12 first acquires the presently used code number m in response to the start timing of a held wireless

frame (step U1). Next, the control portion 12 judges whether or not this acquired presently used code number m is larger than 0 (step U2). If the presently used code number m is smaller than 0 (NO at step U2), since the transmission of all data channels DCH assigned to one call is stopped, the control portion 12 stops the transmission stop control processing.

On the other hand, if the presently used code number m is larger than 0 (YES at step U2), the control portion 12 judges whether or not the in-buffer data amount $Dbuf$ is not larger than a predetermined code m transmission stop threshold value $Sth-m$ (step U3). If the in-buffer data amount $Dbuf$ is larger than the code m transmission stop threshold value $Sth-m$ (NO at step U3), after executing a stop processing of a code m transmission stop timer $Tstp-m$ (step U4), the control portion 12 stops the transmission stop control processing.

On the other hand, if the in-buffer data amount $Dbuf$ is not larger than the code m transmission stop threshold value $Sth-m$ (YES at step U3), the control portion 12 judges whether or not the code m transmission stop timer $Tstp-m$ is already activated (step U5). If the code m transmission stop timer $Tstp-m$ is not activated (NO at step U5), the control portion 12 activates the code m transmission stop timer $Tstp-m$ (step U6), and then, the control portion ends the transmission stop control processing. On the other hand, if the code m transmission stop timer $Tstp-m$ is activated (YES at step U5),

the control portion 12 judges whether or not the code m transmission stop timer T_{stp-m} times out (step U7).

If the code m transmission stop timer T_{stp-m} does not time out (NO at step U7), since the in-buffer data amount D_{buf} might have merely temporarily become smaller than the code m transmission stop threshold value S_{th-m} , the control portion 12 ends this transmission stop control processing. Thereafter, after a start timing of a next wireless frame has passed, if the in-buffer data amount D_{buf} is not larger than the code m transmission stop threshold value S_{th-m} and the code m transmission stop timer T_{stp-m} times out (YES at step U7), the control portion 12 ends the communication through the m -th data channel DCH_m after decrementing the presently used code number m by one (step U8). Thereafter, the control portions 12 returns to the step U2, and judges whether or not the transmission of all data channels DCH is ended, and in the case where the transmission of all channels is not yet ended, the control portion repeats and executes the processing from the step U3.

Another embodiment

Although the explanation of the embodiments of the present invention is as described above, the present invention is not limited to the foregoing embodiments. For example, in the above embodiments, the number of channels assigned to one call is 4. However, it is needless to say that the number of